

## CLAIMS

I/WE CLAIM:

1. A method of determining the expected time required for the performance of a task by an employee, comprising the steps of:

a) entering into a computer memory an initial estimate of the time normally required for the performance of said task;

5 b) entering into said memory data representing the actual time used by said employee in performing tasks;

c) maintaining in said memory for said employee a cumulative historical efficiency factor representing the ratio of the sum of times previously actually used by said employee for the performance of tasks to the sum of the times previously estimated for the performance of those tasks;

d) multiplying said initial estimate by said efficiency factor; and

10 e) generating from said multiplication an adjusted estimate of the time required for the performance of said task by said employee.

2. The method of Claim 1, further comprising the steps of:

f) using said adjusted estimates for a plurality of employees to compute a target time for the completion of a job involving the sequential performance of a plurality of tasks.

3. A method of predictively scheduling a job performed for a customer involving the performance of a plurality of tasks by a plurality of employees each performing one of said tasks, comprising the steps of:

5 a) entering into a computer memory an estimate of the time required to perform each of said tasks;

b) maintaining in said memory information for each employee regarding the availability time at which that employee is next expected to be available to perform a given one of said tasks;

10 c) entering into said memory the beginning and end time of each task or portion thereof performed by each of said employees;

d) maintaining in said memory, for each employee, an efficiency factor representing the ratio of the time historically actually used by said employee to perform tasks to the time  
15 estimated for the performance of those tasks;

e) selecting from said memory for a first of said tasks a first employee next expected to be available to perform said first task;

f) multiplying said estimate of the time required to perform said first task by said efficiency factor of the selected employee to  
20 generate an expected actual time for performing said first task;

g) adding said expected actual time to the availability time of the selected employee to generate a new availability time of the selected employee for subsequent jobs;

h) repeating said selecting, multiplying and adding steps for  
25 each additional task;

i) generating from said repeating step the total expected actual time for the performance of said job;

j) adding said total expected actual time to the availability time of said first employee; and

30 k) generating from said last-named adding step an expected completion time of said job.

4. The method of Claim 3, further comprising the steps of:

l) maintaining in said memory, for each employee, data representing the idle time of said employee accrued during the performance of his task;

5 m) computing, for each employee, the historically average idle time accrued during the performance of comparable tasks; and

n) adding the total average idle time for all selected employees to said total expected actual time when generating said expected completion time of said job.

5. The method of Claim 3, further including the step of periodically generating a notification to said customer of the task currently being performed on said job.

6. In a vehicular repair shop, a method of monitoring the performance of the repair of a vehicle by technicians, comprising the steps of:

a) entering into a computer memory, for each task involved in the repair of said vehicle, information representative of

i) the identity of the vehicle,

ii) the identity of the technician, the start time of the task and the end time of each portion of the task, and

iii) an estimate of the time normally believed to be required to perform the task;

b) computing, from said entered information, the efficiency of said technician as the ratio of the actual time taken by the technician to perform the task to the time estimated for the performance of the task.

7. The method of Claim 6, further comprising the step of

c) generating a report of said computed efficiency.

8. The method of Claim 6, further comprising the step of

c) periodically generating a report of the identity of the technician having possession of said vehicle at any given time, and the task being performed thereon.

9. The method of Claim 6, further comprising the step of

c) computing, from said entered information, the idle time of said technician.

10. The method of Claim 6, further comprising the step of  
c) computing, from said entered information, the idle time  
of said vehicle being performed thereon.

11. The method of Claim 6, further comprising the step of  
c) separately recording in said memory the beginning and  
end time of a rework of a previously performed task; and  
d) adding, in said computing step, the rework time to said  
5 actual time taken by said technician to perform said task.

12. A computerized method of operating an automotive repair  
shop, comprising the steps of:

a) estimating the labor hours required to perform a  
sequence of tasks necessary for a given repair job;

5 b) maintaining a computer database containing, for each  
task-performing employee, efficiency data representing a historical  
average of the ratio of the hours actually spent on a task by the  
employee to the hours estimated for that task;

c) generating from said database a revised estimate of said  
10 hours for said task; and

d) updating said efficiency data in said database when said  
employee has performed said task.

13. The method of Claim 12, wherein said updating is automatically  
done by said employee's entering the start and end times of his  
performance of said task or portions thereof in said database.

14. The method of Claim 12, further comprising the step of:

e) maintaining in said database availability data  
representing, for each employee, the expected time of completion of

all the tasks for whose performance said employee has been  
5 scheduled.

15. The method of Claim 14, further comprising the step of:

f) computing a schedule for said sequence of tasks in accordance with said revised estimate and said availability data.

16. The method of Claim 15, further comprising the step of:

g) generating an indication of the target time for completion of said repair job in accordance with said computed schedule.

17. The method of Claim 12, further comprising the step of:

e) maintaining in said database idle time data representing a historical average of the time that a vehicle undergoing said repair job is in said shop but is not being worked on.

18. The method of Claim 17, further comprising the step of:

f) computing a schedule for the completion of said sequence of tasks in accordance with said revised estimate and said vehicle idle time data.

19. The method of Claim 12, further comprising the step of:

e) maintaining in said database for each employee idle time data representing a historical average of the idle time experienced by said employee during the performance of a comparable task.

20. The method of Claim 19, further comprising the step of:

f) computing a schedule for the completion of said sequence of tasks in accordance with said revised estimate and said employee idle time data.

21. A computerized method of predicting the time of completion of a job involving the performance of sequential tasks by a plurality of employees, comprising the steps of:

a) maintaining in a database data representing the  
5 availability time at which each employee is expected to next be available;

b) selecting an employee for each of said sequential tasks; computing, for each employee, a block of time expected to be needed for the performance of his task;

10 d) adding said blocks of time to the availability time of the employee selected to perform the first of said tasks; and

e) generating from said adding step an indication of the expected completion time of said job.

22. The method of Claim 21, further comprising the step of:

f) adding, for each employee, his computed block of time to his current availability time to determine his availability time for the next job.